pl. No. 09/927,436; Group Art Unit: 1645 At. No. 0942.5300001/RWE/AGU; Batch No. N/A Inventors: Tadayoni-Rebek et al.; Tel: 202/371-2600 Title: Highly Homogeneous Molecular Markers for Electrophoresis

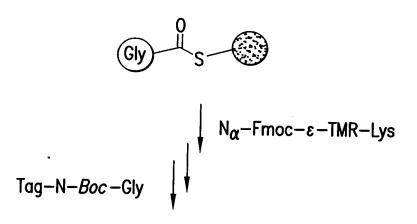
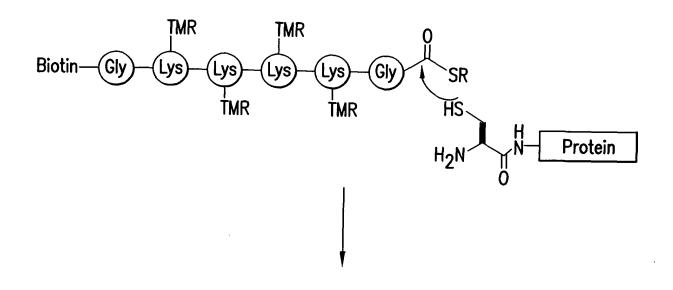


FIG.1

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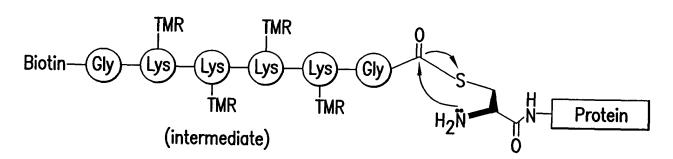




FIG.2

$$N-(CH_2-CH_2-NH_2)_3$$

$$TREN$$

$$N_{\varepsilon}-Fmoc-Lys$$

$$N_{\varepsilon}-Fmoc-Lys$$

$$\frac{Biotin-NHS}{N_{\varepsilon}-Fmoc-N_{\alpha}-Biotin-Lys}$$

$$\frac{6}{H^+}$$

$$N_{\varepsilon}-BrCH_2CO-N_{\alpha}-Biotin-Lys$$

$$\frac{8}{Et_3N}$$

$$Ph-CH_2-SH$$

$$DCC$$

$$N_{\varepsilon}-BrCH_2CO-N_{\alpha}-Biotin-Lys-CO-S-CH_2-Ph$$

$$N_{\varepsilon}-CH_2CO-N_{\alpha}-Biotin-Lys-CO-S-CH_2-Ph$$

$$N_{\varepsilon}-CH_2CO-N_2-CH_2-Ph$$

$$N_{\varepsilon}-CH_2CO-N_2-CH_2-Ph$$

$$N_{\varepsilon}-CH_2CO-N_2-CH_2-Ph$$

$$N_{\varepsilon}-CH_2CO-N_2-CH_2-Ph$$

$$N_{\varepsilon}-CH_2CO-N_2-CH_2-Ph$$

$$N_{\varepsilon}-CH_$$

$$\begin{array}{c|c} & Ph-CH_2-SH \\ \hline 12 & 1[3-dimethylamino)propyl]- \\ \hline 3-ethyl \ carbodiimide \ MeI, \\ \hline DMAP & \\ \end{array}$$

TMR-HN-
$$(CH_2)_6$$
-CO-S- CH_2 -Ph- H_3 +N- $(CH_2)_6$ -CO-S- CH_2 -Ph, CF_3 -COO-Et₃N

TMR-HN-
$$(CH_2)_6$$
-CO-S-HS H-Protein

Toluene thiol,
Gn.HCl
pH7.2

TMR-HN- $(CH_2)_6$

FIG.3B

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Electrophoresis

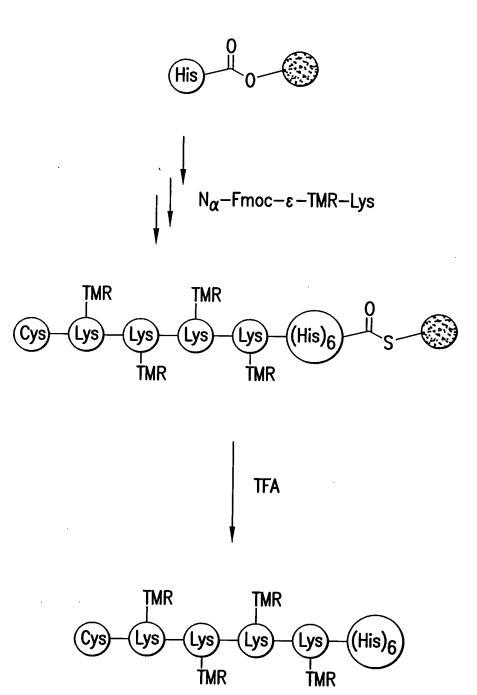
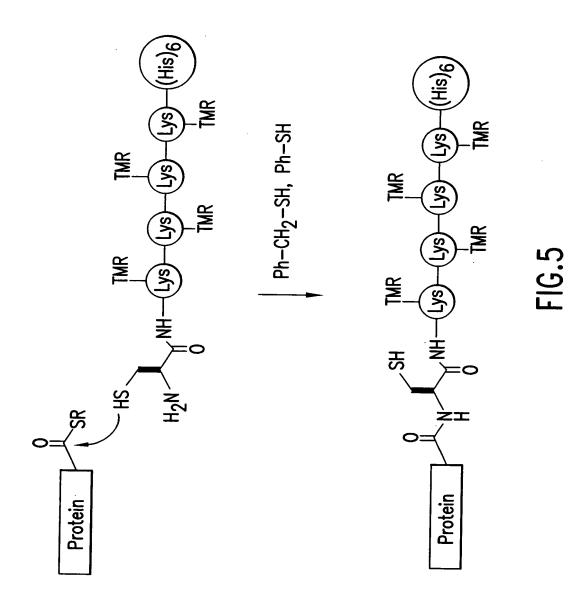


FIG.4

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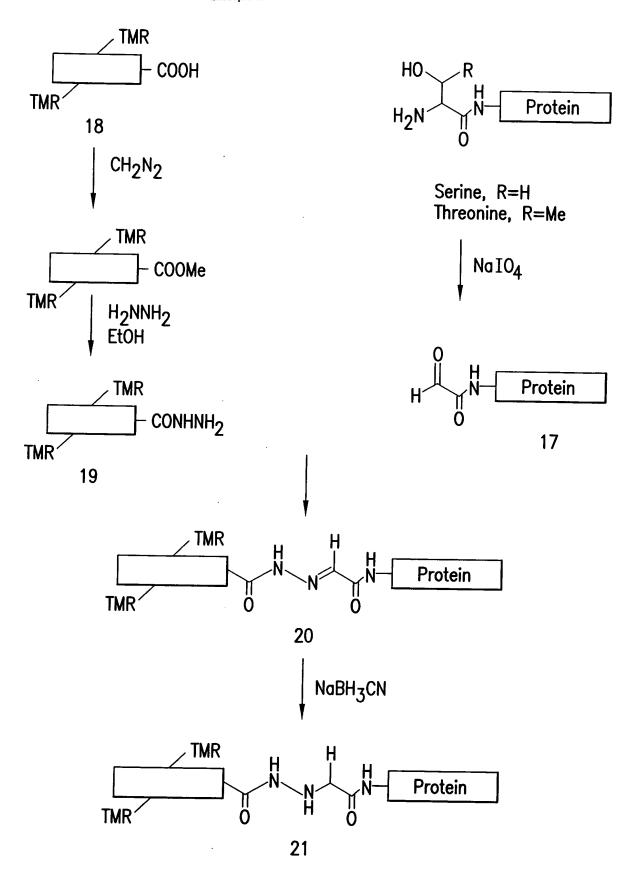


FIG.6

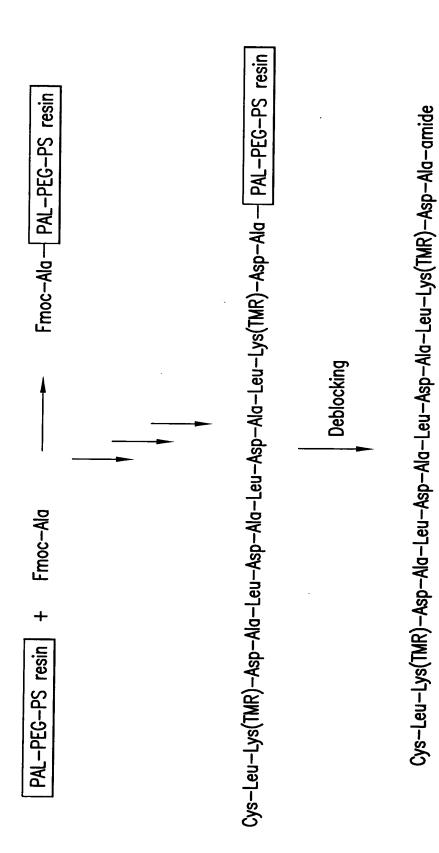
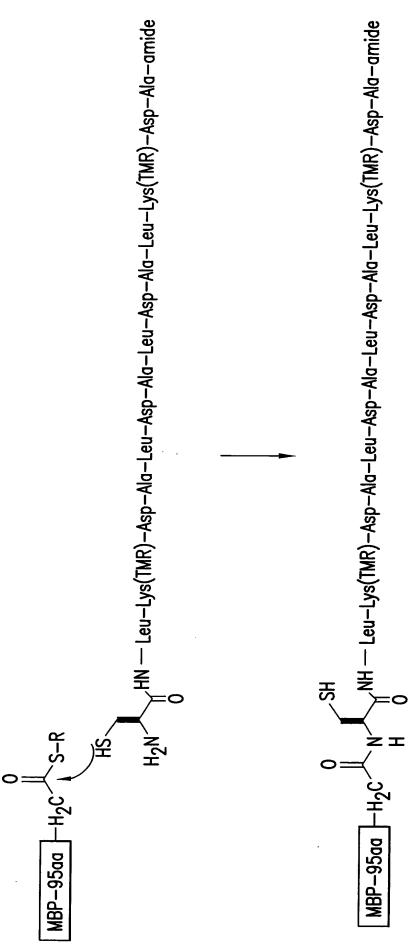


FIG. .



<u>ج</u>

Leu-Lys(TMR)-Asp-Ala-Leu-Asp-Ala-Leu-Asp-Ala-Leu-Lys(TMR)-Asp-Ala-amide Rec. protein H₂C

FIG.9

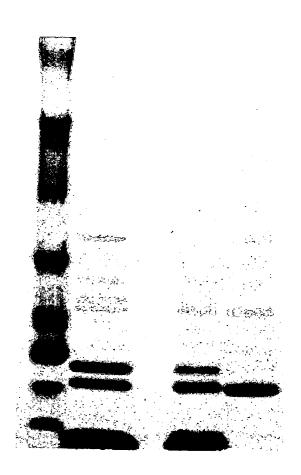


FIG.10